Claim Listing

1. (currently amended): A combination grapple rake and subsoiling implement adapted for pivotal attachment to an excavating machine, comprising:

(a) a frame;

(b) a grapple rake securely attached to said frame, said rake comprising a thumb for grasping objects; and

(c) at least one shank socket affixed to said frame, said socket adapted to receive and secure a subsoiling shank having a substantially pointed earth-working end, and wherein said socket is further adapted to orient said shank in an operating position when the rake is substantially parallel to the ground.

2. (original): The grapple rake of Claim 1, wherein said shank socket is adapted to receive at least one removable fastener for securing said subsoiling shank within said socket.

3. (original): The grapple rake of Claim 1 having two of said shank sockets.

4. (original): The grapple rake of Claim 1 and further comprising a coulter blade adjacent to said shank socket.

5. (original): The grapple rake of Claim 1, and further comprising a subsoiling shank secured within said shank socket.

6. (original): The grapple rake of Claim 5, wherein said subsoiling shank lies substantially in a plane and comprises at least one wing perpendicular to said plane.

7. (original): The grapple rake of Claim 5 and further comprising a coulter blade adjacent to said shank socket and positioned between said subsoiler shank and said rake.

8. (original): A method for conducting dissimilar soil management activities above and beneath the surface of the soil, comprising:

a. providing a combination grapple rake and subsoiler implement comprising a grapple rake and a subsoiler shank having an earth-working end, wherein said grapple rake and said earth-working end are disposed with respect to one another such that when the grapple rake is in an operable position for conducting a grapple rake activity, then the earthworking end for conducting a subsoiling activity is in an idle position, and *vice versa*;

b. operating said implement to employ said subsoiler shank to penetrate the soil to a predetermined depth and moving the earth-working end through said soil along a path in a plane beneath, and generally parallel to, the soil surface to thereby loosen the soil beneath said surface; and

c. operating said implement to employ said rake to move material over the surface of said loosened soil.

9. (original): The method of Claim 8, wherein said plane is below a zone of soil compaction.

10. (original): The method of Claim 8, wherein said material is organic material.

11. (original): The method of Claim 8, wherein said combination grapple rake and subsoiler implement further comprises a coulter blade, and the method includes operating said implement against organic debris so as to shear said debris with said coulter blade.

12. (original): The method of Claim 8, wherein said soil has a zone of hardpan or other compaction and said path is at a depth below said zone.

13. (original): A method for preparing an area having soil compaction for reforestation in a single pass of heavy equipment over said area with an implement, comprising the steps of:

a. providing a combination grapple rake and subsoiler implement comprising a grapple rake and a subsoiler shank having an earth-working end, wherein said grapple rake and said earth-working end are disposed with respect to one another such that when the grapple rake is in an operable position for conducting a grapple rake activity, then the earthworking end is in an idle position for conducting a subsoiling activity, and *vice versa*;

b. operating said implement to employ said subsoiler shank to penetrate the soil in said area to a predetermined depth and moving the earth-working end through said soil along a path in a plane beneath, and generally parallel to, the soil surface to thereby loosen the soil beneath said surface; and

c. operating said implement to employ said rake in said area to move material over the surface of said loosened soil.

14. (original): The method of Claim 13, wherein said area of reforestation is selected from the group consisting of a road, a temporary road, a skid trail, a landing and a legacy compaction area.

15. (new): A combination grapple rake and subsoiling implement adapted for pivotal attachment to an excavating machine, comprising:

(a) a frame;

(b) a grapple rake securely attached to said frame;

(c) at least one shank socket affixed to said frame, said socket adapted to receive and secure a subsoiling shank having a substantially pointed earth-working end, and wherein said socket is further adapted to orient said shank in an operating position when the rake is substantially parallel to the ground; and

(d) a curvilinear subsoiling shank secured within said shank socket.

16. (new): The grapple rake of Claim 15, wherein the number of said shank sockets and the number of said shanks is one or two.

17. (new): The grapple rake of Claim 15, wherein said shank socket is adapted to receive at least one removable fastener for securing said subsoiling shank within said socket.

18. (new): The grapple rake of Claim 15 having two of said shank sockets.

19. (new): The grapple rake of Claim 15, wherein said subsoiling shank lies substantially in a plane and comprises at least one wing perpendicular to said plane.

20. (new): The grapple rake of Claim 15 and further comprising a coulter blade adjacent to said shank socket and positioned between said subsoiler shank and said rake.